The Importance of Prion-Like-Proteins to the Evolution of Meiosis in Early Life on Earth

17 January 2026
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Introduction

The nature of the early evolution of life on Earth is, of course, a long-standing mystery. Some theorists believe that RNA came first and some believe that proteins came first. This paper will address itself to the question of how it was that some lifeforms on Earth evolved to be able to engage in meiosis rather than merely simple mitosis.

Abstract

An observed characteristic of prions is their ability to cause surrounding proteins to undergo changes in their shape, usually with deleterious effects as seen in Creutzfeldt-Jakob Disease. The observation that the class of proteins called prions can cause other proteins to change in shape and the existence of the class of proteins called Prion-Like-Proteins and their role in normal human biology suggests that not all prion-like activity is harmful and may, in fact, be essential to not only modern-day biology, but that it might underpin meiosis at the most fundamental possible level.

If two proteins are differing types are collocated, both of which have properties which enable it to change the shape of the others, it stands to reason that in some small percentage of cases, the prion-like-proteins would arrive at a stalemate and would combine with one-another to form an entirely new protein on the basis of symbiosis.

The presence of DNA is what sets organisms which reproduce through meiosis apart from those which reproduce through mitosis. All DNA nucleotides are configured in what are called “base pairs,” which can be similar or dissimilar and which, in the process of meiosis, must be separated from either one DNA chain or another (the mother or the father) and selectively incorporated into a new one with the aid of ribosomes.

It seems likely to this author, given these basic understandings, that meiosis began on Earth as a result of the chance confluence of two prion-like-proteins which were able to interact with one-another without corrupting the functions of the other and which were able to be segregated upon command by interaction with a ribosome and subsequently re-combined.

Conclusion

It could be argued that DNA-based organisms are fundamentally evolved from the harmonious symbiosis of two different types of prion-like-proteins in early eukaryotic life.